



# INVERTER SERIES

## V1000



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V1000

# V1000

## YASKAWA INVERTER DRIVE TECHNOLOGY

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### Experience & Innovation

**For almost 100 years YASKAWA has been manufacturing and supplying mechatronic products for machine building and industrial automation. Its standard products as well as tailor-made solutions are famous and have a high reputation for outstanding quality and durability.**

### A leader in Inverter Drives technology

YASKAWA is the leading global manufacturer of inverter drives, servo drives, machine controllers, medium voltage inverters, and industrial robots. Founded in 1915, YASKAWA has been a pioneer in motion control and drive technology, launching product innovations, which optimise the productivity and efficiency of both machines and systems.

Today YASKAWA produces more than 1.8 million inverters per year. Considering this, YASKAWA is probably the biggest inverter manufacturer in the world.

Furthermore, with a yearly production of more than 800,000 servo motors and 20,000 robots YASKAWA offers a wide range of products for drive automation processes in many different industries such as mining, steel, machine tools, automotive, packaging, woodworking, textiles and semiconductors.

### V1000 – Easy and cost-saving handling through all kinds of applications

This powerful little helper sets standards in terms of user friendliness and process

orientation. The development of the V1000 focuses on all aspects of application, installation, operation and maintenance.

### Functional Safety Integrated

The V1000 comes with a built in two-channel Safe Torque Off function (STO according to IEC 61800-5-2). By that V1000 replaces motor contactors usually required for safe stop, reducing cost while increasing reliability.

### Finless Type

YASKAWA has as one of the first manufacturers promoted the development of finless type inverters for the European and international markets. Consequently the V1000 is available as finless version for applications with an external cooling system.

### YASKAWA V1000 Features

- ▶ Functional Safety built in, STO according to ISO 13849-1 Cat 3, PLd and IEC 61508, SIL2
- ▶ In normal duty (120% overload) one frame size larger motor can be driven
- ▶ Standard AC Motor and PM motor control
- ▶ V/f and open-loop current vector control
- ▶ One of the smallest inverter drives in the world
- ▶ Side-by-side mounting
- ▶ Icon-based programming
- ▶ Designed for 10 years of maintenance-free operation



## “One for all” – Multiple Applications

YASKAWA V1000 is a general purpose inverter drive covering the demands of a wide field of applications. Simple duties as well as requirements of complex systems need a higher level of functionality, reliability and easy handling, which are provided by the V1000.

- ▶ Operation of PM motors for highly energy efficient applications
- ▶ Small Design – Big Power: 150% overload in heavy duty service is possible. 120% overload in normal duty mode allowing smaller size inverter to do the job of a bigger one
- ▶ Worldwide specification CE, UL, cUL, RoHS
- ▶ High flux braking reduces braking time to the half without using braking resistors
- ▶ Flexible base: IP20 as standard, Finless for special cooling demands, IP66 without keypad for fieldbus connection, and IP66 with large key LED operator for best display readability.
- ▶ High output frequency optional for spindles and other high speed applications

### Easy Installation

YASKAWA V1000 reduces installation time and costs. Installable in tight spaces it requires a minimum of set-up time and provides you all the comfort of a modern up-to-date inverter drive.

- ▶ One of the smallest inverter drives in the world saves mounting space and cost by side-by-side mounting
- ▶ Application parameter pre-settings shorten set-up time
- ▶ Same handling and parameter structure for all YASKAWA inverters
- ▶ DriveWorksEZ visual programming tool. Simply drag and drop icons to customize your drive. Create special sequences and detection functions, then load them onto the drive.

### Quick Maintenance

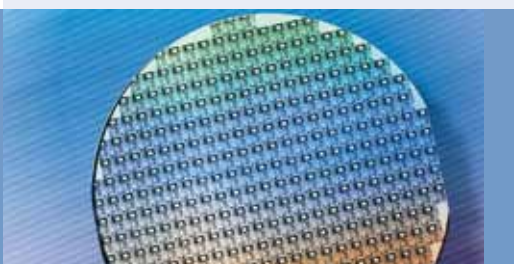
YASKAWA V1000 is an inverter drive which adapts to user demands and provides maintenance functions that ensure quick replacement and minimize down time.

- ▶ Removable terminal board with parameter memory for quick and easy maintenance
- ▶ Screwless control terminal saves setup time

### Reliable Operation

The V1000 continues the tradition of YASKAWA by being the reliable link in your production chain.

- ▶ Designed for Long Performance Life (10 years 24 h per day at 80% nominal load.)
- ▶ Quick response on load and speed changes improves your machine performance
- ▶ Online Auto-Tuning to optimise for improved motor performance at low speed
- ▶ Optional external 24 VDC-supply assures communication and data flow in any power-down situation



# Specifications



Voltage class		Single-phase 200 V						
Inverter model CIMR-VCBA* <sup>1</sup>		0001	0002	0003	0006	0010	0012	00018* <sup>6</sup>
Inverter output	Motor output kW at normal duty* <sup>2</sup>	0.18	0.37	0.75	1.1	2.2	3.0	–
	Motor output kW at heavy duty * <sup>2</sup>	0.1	0.18	0.55	0.75	1.5	2.2	4.0
	Rated output current at normal duty [A]* <sup>3</sup>	1.2	1.9	3.3	6	9.6	12	–
	Rated output current at heavy duty [A]	0.8* <sup>4</sup>	1.6* <sup>4</sup>	3.0* <sup>4</sup>	5.0* <sup>4</sup>	8.0* <sup>5</sup>	11.0* <sup>5</sup>	17.5* <sup>5</sup>
	Overload	125% for 60 sec normal duty, 150 % for 60 sec at heavy duty from inverter rated output current						
	Rated output power at normal duty [kVA]*	0.5	0.7	1.3	2.3	3.7	4.6	–
	Rated output power at heavy duty [kVA]*	0.3	0.6	1.1	1.9	3.0	4.2	6.7
	Max. output voltage	Three-phase 200 to 240 V (proportional to input voltage)						
Max. output frequency	400 Hz							
Inverter input	Rated input voltage	Single-phase 200 to 240 V, -15% to +10%						
	Rated input frequency	50/60 Hz, ±5%						

\* based on input voltage 220 V

Voltage class		Three-phase 200 V										
Inverter model CIMR-VC2A		0001	0002	0004	0006	0010	0012	0020	0030	0040	0056	0069
Inverter output	Motor output kW at normal duty* <sup>2</sup>	0.18	0.37	0.75	1.1	2.2	3.0	5.5	7.5	11.0	15.0	18.5
	Motor output kW at heavy duty* <sup>2</sup>	0.1	0.2	0.4	0.75	1.5	2.2	4.0	5.5	7.5	11.0	15.0
	Rated output current at normal duty [A]* <sup>3</sup>	1.2	1.9	3.5	6.0	9.6	12.0	19.6	30.0	40.0	56.0	69.0
	Rated output current at heavy duty [A]	0.8* <sup>4</sup>	1.6* <sup>4</sup>	3.0* <sup>4</sup>	5.0* <sup>4</sup>	8.0* <sup>5</sup>	11.0* <sup>5</sup>	17.5* <sup>5</sup>	25.0* <sup>5</sup>	33.0* <sup>5</sup>	47.0* <sup>5</sup>	60.0* <sup>5</sup>
	Overload	120% for 60 sec at normal duty, 150% for 60 sec at heavy duty from inverter rated output current										
	Rated output power at normal duty [kVA]*	0.5	0.7	1.3	2.3	3.7	4.6	7.5	11.4	15.2	21.3	26.3
	Rated output power at heavy duty [kVA]*	0.3	0.6	1.1	1.9	3.0	4.2	6.7	9.5	12.6	17.9	22.9
	Max. output voltage	Three-phase 200 to 240 V (proportional to input voltage)										
Max. output frequency	400 Hz											
Inverter input	Rated input voltage	Three-phase 200 to 240 V, -15% to +10%										
	Rated input frequency	50/60 Hz, ±5%										

\* based on input voltage 220V

Voltage class		Three-phase 400 V										
Inverter model CIMR-VC4A		0001	0002	0004	0005	0007	0009	0011	0018	0023	0031	0038
Inverter output	Motor output kW at normal duty* <sup>2</sup>	0.37	0.75	1.5	2.2	3.0	4.0	5.5	7.5	11	15.0	18.5
	Motor output kW at heavy duty* <sup>2</sup>	0.18	0.37	0.75	1.5	2.2	3.0	4.0	5.5	7.5	11.0	15.0
	Rated output current at normal duty [A]* <sup>3</sup>	1.2	2.1	4.1	5.4	6.9	8.8	11.1	17.5	23.0	31.0	38.0
	Rated output current at heavy duty [A]* <sup>5</sup>	1.2	1.8	3.4	4.8	5.5	7.2	9.2	14.8	18.0	24.0	31.0
	Overload	120% for 60 sec at normal duty, 150% for 60 sec at heavy duty from inverter rated output current										
	Rated output power at normal duty [kVA]*	0.9	1.6	3.1	4.1	5.3	6.7	8.5	13.3	17.5	23.6	29.0
	Rated output power at heavy duty [kVA]*	0.9	1.4	2.6	3.7	4.2	5.5	7.0	11.3	13.7	18.3	23.6
	Max. output voltage	Three-phase 380 to 480 V (proportional to input voltage)										
Max. output frequency	400 Hz											
Inverter input	Rated input voltage	Three-phase 380 to 480 V, -15% to +10%										
	Rated input frequency	50/60 Hz, ±5%										

\* based on input voltage 400 V

<sup>1</sup> Drives with a single-phase power supply input have three-phase output. Single-phase motors cannot be used.

<sup>2</sup> The motor capacity (kW) refers to a YASKAWA 4-pole, 60 Hz, 200 V motor. The rated output current of the drive output amps should be equal to or greater than the motor rated current.

<sup>3</sup> at 2 kHz carrier frequency without derating

<sup>4</sup> at 10 kHz carrier frequency without derating

<sup>5</sup> at 8 kHz carrier frequency without derating

<sup>6</sup> only heavy duty available

Rotational Auto-Tuning must be performed to achieve the performance described with Open Loop Vector Control.



		Specifications
Control Functions	Control methods	Open Loop Vector Control (Current Vector), V/f Control, PM Open Loop Vector Control (for SPM and IPM motors)
	Frequency Control Range	0.01 to 400 Hz
	Frequency Accuracy (Temperature Fluctuation)	Digital input: within $\pm 0.01\%$ of the max. output frequency ( $-10^{\circ}\text{C}$ to $+50^{\circ}\text{C}$ ) Analog input: within $\pm 0.1\%$ of the max. output frequency ( $25^{\circ}\text{C} \pm 10^{\circ}\text{C}$ )
	Frequency Setting Resolution	Digital input: 0.01 Hz Analog input: 1/1000 of max. frequency
	Output Frequency Resolution	20 bit of maximum output frequency (parameter E1-04 setting)
	Frequency Setting Resolution	Main frequency reference: 0..10 V (20 k $\Omega$ ) 10 bit, 4..20 mA (250 $\Omega$ ) or 0..20 mA (250 $\Omega$ ) 9-bit Main speed reference : Pulse Train Input (max. 32 kHz)
	Starting Torque	200% / 0.5 Hz (assumes Heavy Duty rating AC Motor of 3.7 kW or less using Open Loop Vector Control), 50% / 6 Hz (assumes PM Open Loop Vector Control)
	Speed Control Range	1:100 (Open Loop Vector Control), 1:20 to 40 (V/f Control), 1:10 (PM Open Loop Vector Control)
	Speed Control Accuracy	$\pm 0.2\%$ in Open Loop Vector Control ( $25^{\circ}\text{C} \pm 10^{\circ}\text{C}$ ) *1
	Speed Response	5 Hz in Open Loop Vector ( $25^{\circ}\text{C} \pm 10^{\circ}\text{C}$ ) (requires Rotational Auto-Tuning)
	Torque Limit	Open Loop Vector Control allows separate settings in four quadrants
	Accel/Decel Time	0.0 to 6000.0 s (4 selectable combinations of independent acceleration and deceleration settings)
	Protection Function	Braking Torque
V/f Characteristics		User-selected programs, V/f preset patterns possible
Main Control Functions		Momentary power loss ride-thru, Speed search, Overtorque detection, Torque limit, 17-step speed (max), Accel/decel time switch, S-curve accel/decel, 3-wire sequence, Auto-tuning (rotational, stationary tuning for resistance between lines), Dwell, Cooling fan on/off switch, Slip compensation, Torque compensation, Frequency jump, Upper/lower limits for frequency reference, DC injection braking at start and stop, Overexcitation braking, High slip braking, PID control (with sleep function), Energy saving control, MEMOBUS comm. (RS-485/422 max, 115.2 kbps), Fault restart, Application presets, DriveWorksEZ (customized function), Removable terminal block with parameter backup function...
Motor Protection		Motor overheat protection based on output current
Momentary Overcurrent Protection		Drive stops when output current exceeds 200% of Heavy Duty Rating
Overload Protection		Drive stops after 60 s at 150% of rated output current (Heavy Duty Rating)*4
Overvoltage Protection		200 V class: Stops when DC bus exceeds approx. 410 V 400 V class: Stops when DC bus exceeds approx. 820 V
Undervoltage Protection		Stops when DC bus voltage falls below the following levels: Three-phase 200 V class: approx. 190 V, single-phase 200 V class: approx. 160 V, three-phase 400 V class: approx. 380 V, three-phase 380 V class: approx. 350 V
Momentary Power Loss Ride-Thru		Stops after approx. 15 ms (default). Parameter settings allow the drive to continue running if power loss lasts for up to approx. 2 s *5
Heatsink Overheat Protection		Protection by thermistor
Braking Resistance Overheat Protection		Overheat sensor for braking resistor (optional ERF-type, 3% ED)
Stall Prevention		Separate settings allowed during acceleration, and during run. Enable/disable only during deceleration.
Operating Environment		Ground Fault Protection
	Charge LED	Charge LED remains lit until DC bus has fallen below approx. 50 V
	Area of Use	Indoors
	Ambient Temperature	$-10^{\circ}\text{C}$ to $+50^{\circ}\text{C}$ (open chassis), $-10^{\circ}\text{C}$ to $+40^{\circ}\text{C}$ (NEMA Type 1)
	Humidity	95 RH% or less (no condensation)
	Storage Temperature	$-20^{\circ}\text{C}$ to $+60^{\circ}\text{C}$ (short-term temperature during transportation)
	Altitude	Max. 1000 m (output derating of 1% per 100 m above 1000 m, max. 3000 m)
Shock	10 to less than 20 Hz (9.8 m/s <sup>2</sup> ) max., 20 to 55 Hz (5.9 m/s <sup>2</sup> ) max.	
Standards	CE, UL, cUL, RoHS	
Protection Design	IP20 open-chassis, NEMA Type 1 enclosure, IP66	

\*1 Speed control accuracy may vary slightly depending on installation conditions or motor used.

\*2 Momentary average deceleration torque refers to the deceleration torque from 60Hz down to 0 Hz. This may vary depending on the motor.

\*3 If L3-04 is enabled when using a braking resistor or braking resistor unit, the motor may not stop within the specified deceleration time.

\*4 Overload protection may be triggered at lower levels if output frequency is below 6 Hz.

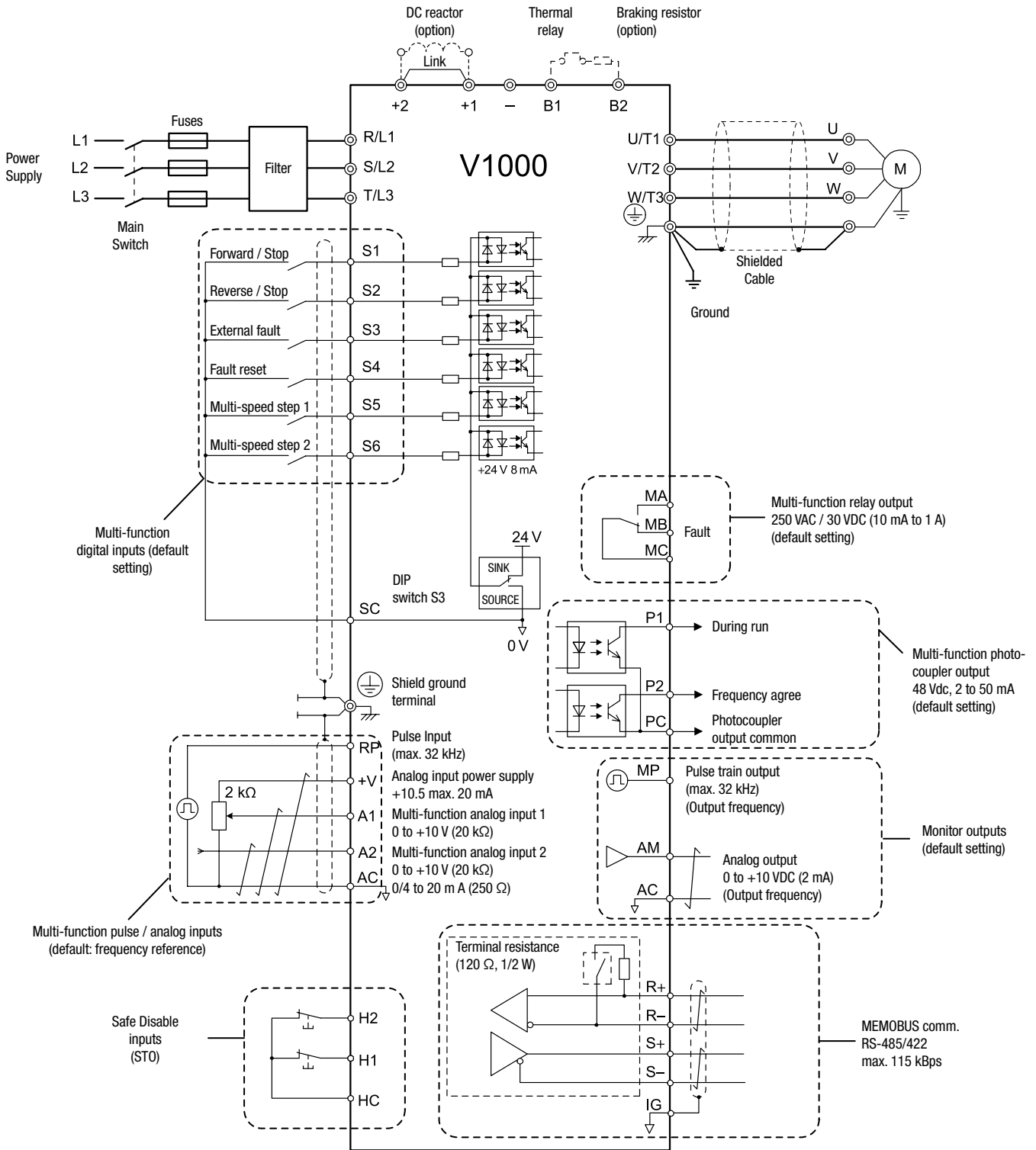
\*5 Varies by drive capacity. Drives smaller than 7.5 kW (CIMR-VA2A0004/CIMR-VA4A0023) require a separate Momentary Power Loss Recovery Unit to continue operating during a momentary power loss of 2 s.

\*6 Protection may not be provided under the following conditions as the motor windings are grounded internally during run:

- Low resistance to ground from the motor cable or terminal block.
- Drive already has a short-circuit when the power is turned on.



# Connection Diagram



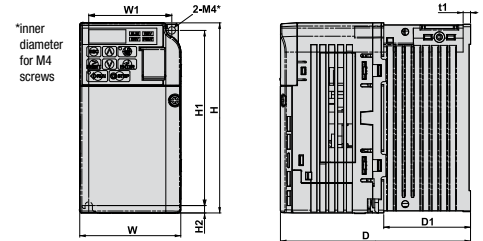
- ± Use twisted pair cables.
- ⊕ Use shielded twisted pair cables.
- ⊙ Indicates a main circuit terminal.
- Indicates a control circuit terminal.



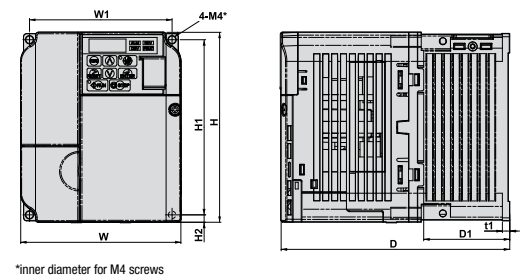
## V1000 Dimensions

### IP20/Open-Chassis (without an EMC filter)

Voltage Class	Drive Model CIMR-VC□	Dimensions in mm										
		W1	H1	W	H	D	t1	H2	D1	Weight (kg)		
Single-Phase 200 V Class	BA0001B	56	118	68	128	76	3	5	6.5	0.6		
	BA0002B					118	5				38.5	1.0
	BA0003B					76	3				6.5	0.6
Three-Phase 200 V Class	2A0001B	56	118	68	128	76	3	5	6.5	0.6		
	2A0002B					108	5				38.5	0.9
	2A0004B					108	5				38.5	0.9
	2A0006B					128	5				58.5	1.1

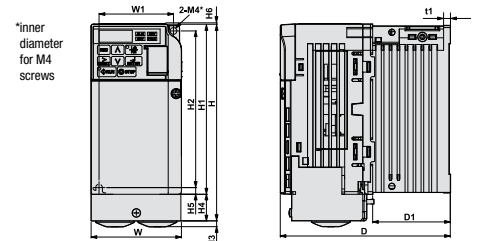


Voltage Class	Drive Model CIMR-VC□	Dimensions in mm									
		W1	H1	W	H	D	t1	H2	D1	Weight (kg)	
Single-Phase 200 V Class	BA0006B	96	118	108	128	137.5	5	5	58	1.7	
	BA0010B					154					1.8
	BA0012B					163					2.4
	BA0018B					170					3.0
Three-Phase 200 V Class	2A0010B	96	118	108	128	129	5	5	58	1.7	
	2A0012B					137.5					2.4
	2A0020B					143					2.4
Three-Phase 400 V Class	4A0001B	96	118	108	128	81	5	5	58	1.7	
	4A0002B					99					1.2
	4A0004B					137.5					1.0
	4A0005B					10					1.0
	4A0007B					154					28
	4A0009B					137.5					2.4
	4A0011B					143					65

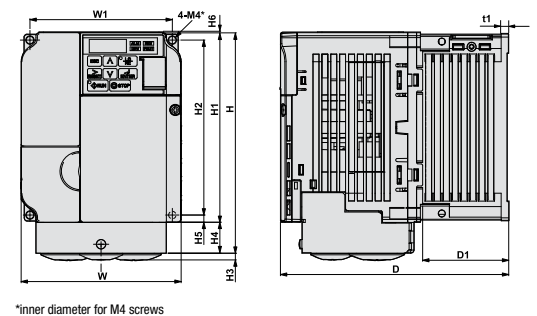


### IP20/NEMA Type 1 (without an EMC filter)

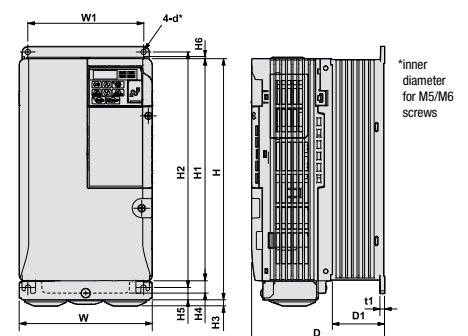
Voltage Class	Drive Model CIMR-VC□	Dimensions in mm														
		W1	H2	W	H1	D	t1	H5	D1	H	H4	H3	H6	Weight (kg)		
Single-Phase 200 V Class	BA0001F	56	118	68	128	76	3	5	6.5	149.5	20	4	1.5	0.8		
	BA0002F					118	5								39	1.2
	BA0003F					76	3								6.5	0.8
Three-Phase 200 V Class	2A0001F	56	118	68	128	76	3	5	6.5	149.5	20	4	1.5	0.8		
	2A0002F					108	5								39	1.1
	2A0004F					108	5								39	1.1
	2A0006F					128	5								59	1.3



Voltage Class	Drive Model CIMR-VC□	Dimensions in mm													
		W1	H2	W	H1	D	t1	H5	D1	H	H4	H3	H6	Weight (kg)	
Single-Phase 200 V Class	BA0006F	96	118	108	128	137.5	5	5	58	149.5	20	4	1.5	1.9	
	BA0010F					154									2.0
	BA0012F					163									2.6
	BA0018F					170									3.3
Three-Phase 200 V Class	2A0010F	96	118	108	128	129	5	5	58	149.5	20	4	1.5	1.9	
	2A0012F					137.5									2.6
	2A0020F					143									2.6
Three-Phase 400 V Class	4A0001F	96	118	108	128	81	5	5	58	149.5	20	4	1.5	1.9	
	4A0002F					99									1.4
	4A0004F					137.5									1.2
	4A0005F					10									1.2
	4A0007F					154									28
	4A0009F					137.5									2.6
	4A0011F					143									65



Voltage Class	Drive Model CIMR-VC□	Dimensions in mm																							
		W1	H2	W	H1	D	t1	H5	D1	H	H4	H3	H6	d	Weight (kg)										
Three-Phase 200 V Class	2A0030F	122	248	140	234	140	5	13	55	254	13	6	1.5	M5	3.8										
	2A0040F													75		290	15	7	M6	5.5					
	2A0056F													192		336	220	320	187	78	350	15	7	M6	9.2
	2A0069F													192		336	220	320	187	78	350	15	7	M6	9.2
Three-Phase 400 V Class	4A0018F	122	248	140	234	140	5	13	55	254	13	6	1.5	M5	3.8										
	4A0023F													75		290	15	7	M6	5.5					
	4A0031F													192		336	220	320	187	78	350	15	7	M6	9.2
	4A0038F													192		336	220	320	187	78	350	15	7	M6	9.2

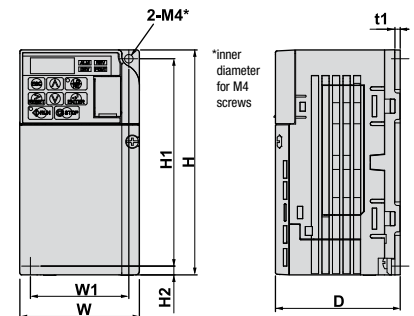




## V1000 Finless Version Dimensions

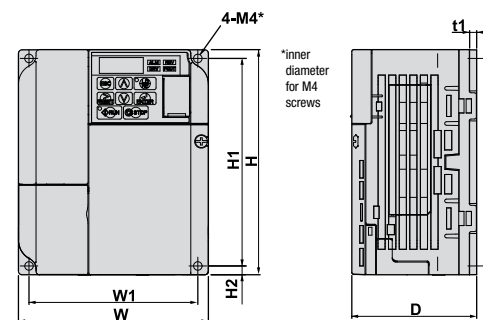
... for Models BA0001J□□~2A0006J□□

Voltage Class	Drive Model CIMR-VC□	Dimensions in mm							
		W	H	D	W1	H1	H2	t1	Weight (kg)
Single-Phase 200 V Class	BA0001J	68	128	71	56	118	5	3	0.6
	BA0002J			81					
	BA0003J			81					
Three-Phase 200 V Class	2A0001J	68	128	71	56	118	5	3	0.6
	2A0002J								0.7
	2A0004J								0.7
	2A0006J								0.7



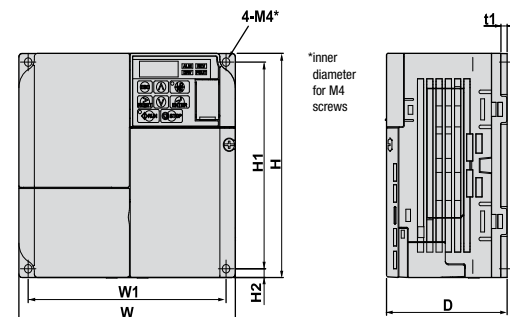
... for Models BA0006J□□~4A0009J□□

Voltage Class	Drive Model CIMR-VC□	Dimensions in mm							
		W	H	D	W1	H1	H2	t1	Weight (kg)
Single-Phase 200 V Class	BA0006J	108	128	79.5	96	118	5	4	1.1
	BA0010J			91					
Three-Phase 200 V Class	2A0008J	108	128	71	96	118	5	4	1.0
	2A0010J			79.5					
	2A0012J			79.5					
Three-Phase 400 V class	4A0001J	108	128	71	96	118	5	4	0.9
	4A0002J			79.5					
	4A0004J			79.5					
	4A0005J			96					
	4A0007J			96					
	4A0009J			96					



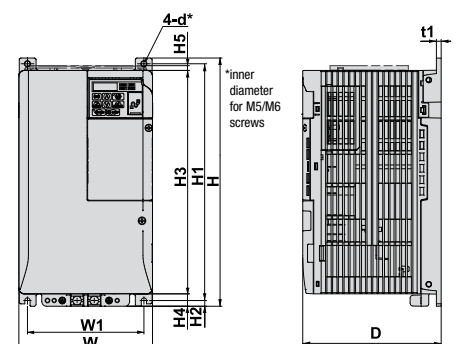
... for Models BA0012J□□~4A0011J□□

Voltage Class	Drive Model CIMR-VC□	Dimensions in mm							
		W	H	D	W1	H1	H2	t1	Weight (kg)
Single-Phase 200 V Class	BA0012J	140	128	98	128	118	5	4	1.4
Three-Phase 200 V Class	2A0018J	140	128	78	128	118	5	4	1.3
	2A0020J			78					
Three-Phase 400 V class	4A0011J	140	128	78	128	118	5	4	1.3

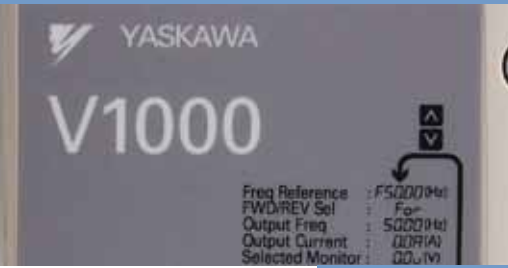


... for Models 2A0030J□□~4A0038J□□

Voltage Class	Drive Model CIMR-VC□	Dimensions in mm											
		W	H	D	W1	H1	H2	H3	H4	H5	d	t1	Weight (kg)
Three-Phase 200 V Class	2A0030J	140	260	145	122	248	6	234	13	5	M5	5	3.2
	2A0040J												4.6
	2A0056J												7.0
	2A0069J												7.0
Three-Phase 400 V Class	4A0018J	140	260	145	122	248	6	234	13	5	M5	5	3.1
	4A0023J												3.2
	4A0031J												4.3
	4A0038J												4.6







## V1000 IP66 Dimensions

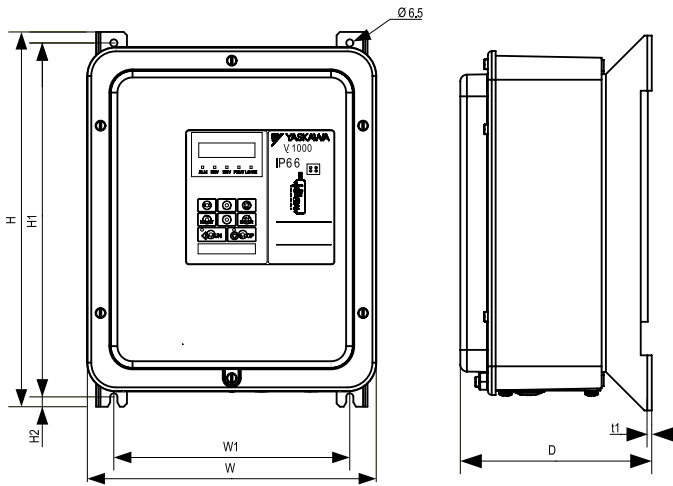


Fig. 1

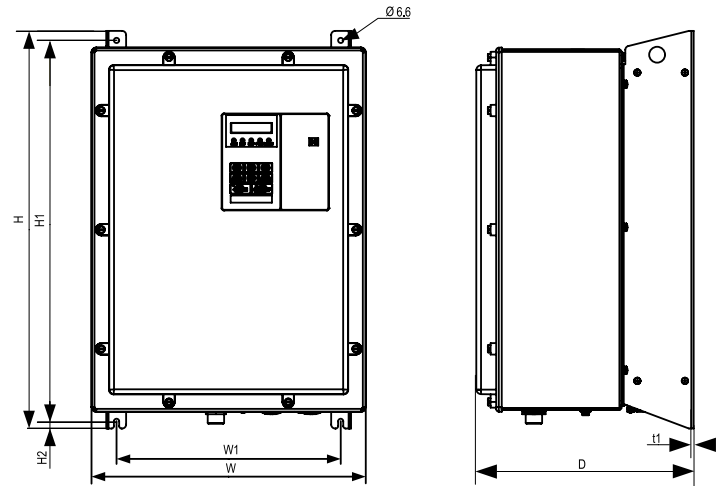


Fig. 2

Voltage Class	Inverter model CIMR-VC□	Figure	Dimensions in mm							Weight (kg)
			W	H	D	W1	H1	H2	t1	
Single-Phase 200 V Class	BA0001H□□-0080/0081	Fig. 1	262	340	173.5	214	321	9	2	4.9
	BA0002H□□-0080/0081									5.1
	BA0003H□□-0080/0081									5.7
	BA0006H□□-0080/0081									5.8
	BA0010H□□-0080/0081									6.1
	BA0012H□□-0080/0081									5.2
	4A0001H□□-0080/0081									5.3
	4A0002H□□-0080/0081									5.7
	4A0004H□□-0080/0081									6.0
	4A0005H□□-0080/0081									5.7
	4A0007H□□-0080/0081									6.0
4A0009H□□-0080/0081	19.8									
Three-Phase 400 V Class	4A0018H□□-0080/0081	Fig. 2	345	500.5	273.5	282	458.5	10	2	19.9
	4A0023H□□-0080/0081									21.0
	4A0031H□□-0080/0081									21.3
	4A0038H□□-0080/0081									

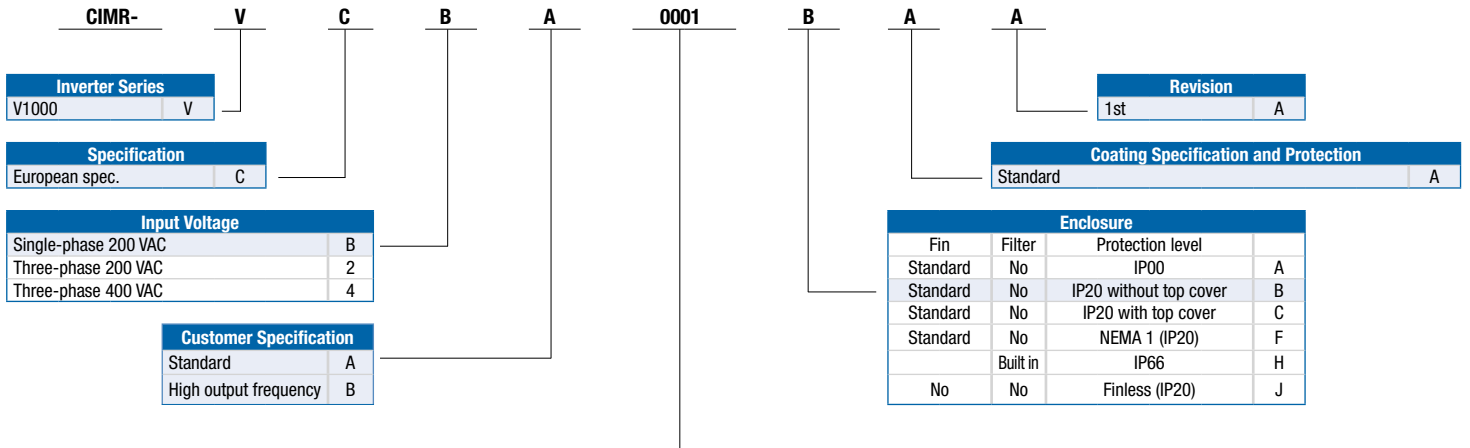
# Options



Name	Purpose	Model, Manufacturer
<b>Input noise filter</b>	Reduces noise from the line that enters into the drive input power system. Should be installed as close as possible to the drive.	<b>1-phase 200 V</b> CIMR-VCBA0001 FS23638-10-07 CIMR-VCBA0002 FS23638-10-07 CIMR-VCBA0003 FS23638-10-07 CIMR-VCBA0006 FS23638-20-07 CIMR-VCBA0010 FS23638-20-07 CIMR-VCBA0012 FS23638-30-07 CIMR-VCBA0018 FS23638-40-07  <b>3-phase 200 V</b> CIMR-VC2A0001 FS23637-8-07 CIMR-VC2A0002 FS23637-8-07 CIMR-VC2A0004 FS23637-8-07 CIMR-VC2A0006 FS23637-8-07 CIMR-VC2A0010 FS23637-14-07 CIMR-VC2A0012 FS23637-14-07 CIMR-VC2A0020 FS23637-24-07 CIMR-VC2A0030 FS23637-52-07 CIMR-VC2A0040 FS23637-52-07 CIMR-VC2A0056 FS23637-68-07 CIMR-VC2A0069 FS23637-80-07  <b>3-phase 400 V</b> CIMR-VC4A0001 FS23639-5-07 CIMR-VC4A0002 FS23639-5-07 CIMR-VC4A0004 FS23639-5-07 CIMR-VC4A0005 FS23639-10-07 CIMR-VC4A0007 FS23639-10-07 CIMR-VC4A0009 FS23639-10-07 CIMR-VC4A0011 FS23639-15-07 CIMR-VC4A0018 FS23639-30-07 CIMR-VC4A0023 FS23639-30-07 CIMR-VC4A0031 FS23639-50-07 CIMR-VC4A0038 FS23639-50-07
<b>Braking resistor</b>	Used to shorten the deceleration time by dissipating regenerative energy through a resistor (3% ED).	ERF-150WJ series
<b>AC Choke</b>	Reducing Harmonics	
<b>Braking Chopper</b>	Shortened deceleration time results when used with a Braking Transistor Unit.	CDBR-□□□□
<b>24 V power supply</b>	Provides power supply for the control circuit and option boards. Note: Parameter settings cannot be changed when the drive is operating solely from this power supply.	PS-V10S PS-V10M
<b>USB copy unit (RJ-45/USB compatible plug)</b>	Adapter for connecting the drive to the USB port of a PC. (e.g. for Support Tool Drive Wizard Plus) Can copy parameter settings to be later transferred to another drive.	JVOP-181
<b>Support tools (DriveWizard Plus) cable</b>	Connects the drive to a PC for use with DriveWizard.	WV103
<b>LCD operator</b>	For easier operation when using the optional LCD operator. Allows for remote operation. Includes a Copy function for saving drive settings.	JVOP-180
<b>LED operator</b>	LED digital operator for easier operation.	JVOP-182
<b>Operator extension cable</b>	Cable for connecting the LCD operator.	WV001: 1 m WV003: 3 m
<b>Operator Mounting Frame</b>	Frame for mounting JVOP-180/182 on panel door or wall, IP65	EUOP-V11001
<b>Communication interface unit</b>	Allows control of the drive via a fieldbus network.	MECHATROLINK-2
		CC-link
		DeviceNet
		PROFIBUS-DP
		CANopen
		PROFINET
		Modbus TCP/IP
		EtherCat
Ethernet/IP		
<b>Attachment for external heatsink</b>	Mechanical kit to install the drive with the heatsink out of the cabinet.	100-034□□□□
<b>DIN rail attachment kit</b>	Mechanical kit for installation on a DIN rail.	

Note: contact the manufacturer in question for availability and specifications of non-YASKAWA products.

# Ratings & Type Descriptions



Single-phase 200 VAC				
	Normal duty		Heavy duty	
	Rated output current	Max. applicable motor	Rated output current	Max. applicable motor
0001	1.2 A	0.18 kW	0.8 A	0.1 kW
0002	1.9 A	0.37 kW	1.6 A	0.18 kW
0003	3.3 A	0.75 kW	3.0 A	0.55 kW
0006	6.0 A	1.1 kW	5.0 A	0.75 kW
0010	9.6 A	2.2 kW	8.0 A	1.5 kW
0012	12.0 A	3.0 kW	11.0 A	2.2 kW
0018	-	-	17.5 A	4.0 kW

Three-phase 200 VAC				
	Normal duty		Heavy duty	
	Rated output current	Max. applicable motor	Rated output current	Max. applicable motor
0001	1.2 A	0.18 kW	0.8 A	0.1 kW
0002	1.9 A	0.37 kW	1.6 A	0.2 kW
0004	3.5 A	0.75 kW	3.0 A	0.4 kW
0006	6.0 A	1.1 kW	5.0 A	0.75 kW
0010	9.6 A	2.2 kW	8.0 A	1.5 kW
0012	12.0 A	3.0 kW	11.0 A	2.2 kW
0020	19.6 A	5.5 kW	17.5 A	4.0 kW
0030	30.0 A	7.5 kW	25.0 A	5.5 kW
0040	40.0 A	11.0 kW	33.0 A	7.5 kW
0056	56.0 A	15.0 kW	47.0 A	11.0 kW
0069	69.0 A	18.5 kW	60.0 A	15.0 kW

Three-phase 400 VAC				
	Normal duty		Heavy duty	
	Rated output current	Max. applicable motor	Rated output current	Max. applicable motor
0001	1.2 A	0.37 kW	1.2 A	0.2 kW
0002	2.1 A	0.75 kW	1.8 A	0.4 kW
0004	4.1 A	1.5 kW	3.4 A	0.75 kW
0005	5.4 A	2.2 kW	4.8 A	1.5 kW
0007	6.9 A	3.0 kW	5.5 A	2.2 kW
0009	8.8 A	4.0 kW	7.2 A	3.0 kW
0011	11.1 A	5.5 kW	9.2 A	4.0 kW
0018	17.5 A	7.5 kW	14.8 A	5.5 kW
0023	23.0 A	11.0 kW	18.0 A	7.5 kW
0031	31.0 A	15.0 kW	24.0 A	11.0 kW
0038	38.0 A	18.5 kW	31.0 A	15.0 kW



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International Standards



Safety Standards

Safety Stop

RoHS Directive

RoHS Directive stands for the EU directive on the restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment